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Piligenoides, a new genus near to *Piligena* van Emden, 1947 (Diptera: Tachnidae: Dexiini)

by

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Piligenoides vittata **gen. nov., sp. nov.** is described from northern Natal Province of South Africa. Difficulties in delimiting genera of Dexiini are discussed.

The Dexiini is a fairly large tribe of Tachinidae, occurring in all zoogeographical regions, but notably absent from New Zealand. Insect hosts are always larval Coleoptera (e.g. Scarabaeidae and Cerambycidae in the Afrotropical Region). The Old World fauna (exclusive of Oceania) comprises about 40 genera, 18 of which occur in the Afrotropical Region. Twelve of the Afrotropical genera are endemic to the region, six of these to Madagascar. Of the remaining genera, *Billaea* Robineau-Desvoidy and *Prosena* Le Peletier & Serville occur in all Old World regions, whereas *Dexia* Meigen, *Dexiotrix* Villeneuve and *Dinera* Robineau-Desvoidy are absent from Australasia and *Dolichodexia* Brauer & Bergenstamm is shared only with the Oriental Region. *Piligenoides* gen. nov., as with the closely related *Piligena* van Emden, is apparently an Afrotropical endemic; numerous specimens have been collected during Natal Museum field trips to northern Natal.

In addition to *Piligenoides* and the 18 genera recorded from the Afrotropical Region by Crosskey (1980), there is the possibility of at least one further generic record. Crosskey (1984) considers *Dexia buccata* van Emden, 1947 to be incorrectly assigned to *Dexia* and therefore of uncertain generic affilitation (his 1984 key to Afrotropical genera of Dexiini excludes the Madagascan fauna). The holotype female is the only known specimen and is in poor condition. An assessment of its generic assignment is therefore delayed until more specimens become available.

Mesnil (1980) points out that the true generic characters of Dexiini are difficult to determine. This is especially so in genera such as *Billaea* in which there is marked intrageneric variation (e.g. the facial carina can be present or absent, the epistome strongly developed or not clearly differentiated from the face, and the proboscis long or short). The matter is further complicated by the fact that abnormalities in chaetotaxy can occur fairly often. For example, according to Mesnil (1980), *Dexia vacua* (Fallén) can have discal setae present or absent on T_3 to T_5 in females. *Piligenoides* is similarly subject to chaetotaxal variations (the pre-alar and the T1+2 median marginals can be present or absent), but is clearly a single, monotypic genus. If these variations were considered in isolation, they could have suggested the existence of more than one genus – meaning that the erection of a new monotypic dexiine genus ideally requires the examination of a fair number of specimens, so that an accurate definition of generic limits can be given.

Piligenoides gen. nov.

Type-species: *Piligenoides vittata* **sp. nov.**

Facial carina reduced, not visible in profile, low and ridgelike, height above lateral margins of face at most subequal to length of second antennal segment. Antenna short, total length 0,5–0,6 × genal depth, antennal axis just below middle of eye height; third antennal segment about 2,0 × as long as second; arista swollen in basal fifth to third, subequal to or up to 1,2 × combined length of first to third antennal segments; arista short haired (Fig. 1). Profrons in profile about 0,4 × genal depth (Fig. 1). Epistome a narrow strip between buccal margin and antennal apices, narrowest at vibrissal angle but slightly wider above and 2,5–3,5 × as wide at buccal margin (Fig. 2). Parafacial 0,8–1,2 × combined width of face and facial ridges; facial ridge excavated below parafacial in upper half (Fig. 2). Frons at vertex about 0,1–0,2 × head width in male. Proboscis short, total length 0,5–0,7 × eye height, mentum 0,3–0,5 × total length; palp subequal to or up to 1,3 × length of third antennal segment. Outer verticals absent in male. Ocellars proclinate. Parafrontal with irregular and very sparse (sometimes barely visible) hairs (Fig. 1). Parafacial bare. Vibrissae strong and cruciate, positioned 0,4–0,5 × distance between buccal margin and antennal bases (Figs 1 & 2).

Two to three humerals, two posthumerals. Pre-alar small or absent, 0,3–0,8 × length and strength of first *post dc* if present. Two supra-alars, posterior one reduced. Two *post ia*. Two postalars and one setula median to inner postalar. Dorsocentrals: 3 + 3–4. Acrostichals: 2 + 3–4. Scutellum with three pairs marginal setae, basals and subapicals subequal in length and strength, apicals 0,6–0,8 × this length and much weaker; two pairs pre-apical discals (sometimes reduced or absent, or irregularly developed), similar in length and strength to apicals. Propleuron haired. Three sternopleurals. Pteropleural seta differentiated from surrounding setulae. Metathoracic spiracle with one circular to oval operculum.

Cell R_5 very narrowly open or closed at or just before margin, if closed before margin petiole 0,2–0,5 × *r–m* length. Bend of *M* strongly abrupt with an appendix 0,3–1,0 × length of r–m (Fig. 4). Basal node of R_{4+5} with one to four setulae (very rarely bare). Junction of *m–cu* with *M* 0,6–0,8 × distance between *r–m* and bend of *M* (Fig. 4). Distance between *m–cu* = *M* junction and bend of *M* 0,8–1,3 × distance between bend of *M* and wing margin (Fig. 4). Venation otherwise as in Fig. 4. Second costal sector bare ventrally. Lower calypter bare on upper surface, peripheral hair-fringe subequal in length to aristal hair.

Femora, tibiae and tarsi usually subequal in length. Fore tibia: 2 *d* and 1 *pv*; 1 *pv* pre-apical. Mid tibia: 1 *ad*, 2–3 (rarely 1) *pd* and 1 *v*; 2 *d* and 3 *v* pre-apicals. Hind tibia: numerous *ad* setae/setulae but only 1–3 distinct *ad*, 2–3 *pd* and 1 *av*; 2 *d* and 2 *v* pre-apicals. Tibial claws subequal in length to pulvilli in male.

Abdomen obovate in dorsal outline (Fig. 5). T1+2 shallowly excavated to near hind margin, distance between posterior extremity of excavation and hind margin 0,7–1,5 × length of third antennal segment. T1+2, as a rule, with one pair median marginals (absent on one or both sides in Ndumu Reserve specimens). T3 with one pair median marginals and one pair lateral marginals. T4 either with two pairs median marginals and two pairs lateral marginals, or a complete marginal row. T5 with a complete marginal row.

Piligena van Emden, 1947 is superficially rather similar to *Piligenoides*, but dif-

fers in having the following characters: parafacial haired, epistomal strip markedly broader and with width at buccal margin at most only 1,3 × that at vibrissal angle (Fig. 8), three post *ia* and T1+2 without median marginal setae. *Piligenoides* does not appear to have affinities with any other Old World genera; the following combination of characters distinguish it from all the genera recorded from the African mainland: facial carina reduced and not separating antennae, parafacial bare, three pairs scutellar marginal setae, costal spine absent, M_2 appendix present, mid tibia with one *ad*.

Piligenoides vittata sp. nov., Figs 1–7

Description: Based (external characters) on male holotype, supplemented with information from male paratypes (in parentheses). Male genitalia described from two male paratypes.

Measurements: Total length 9,2 mm (8,0–10,0 mm); length of wing from humeral crossvein 5,7 mm (4,8–6,6 mm).

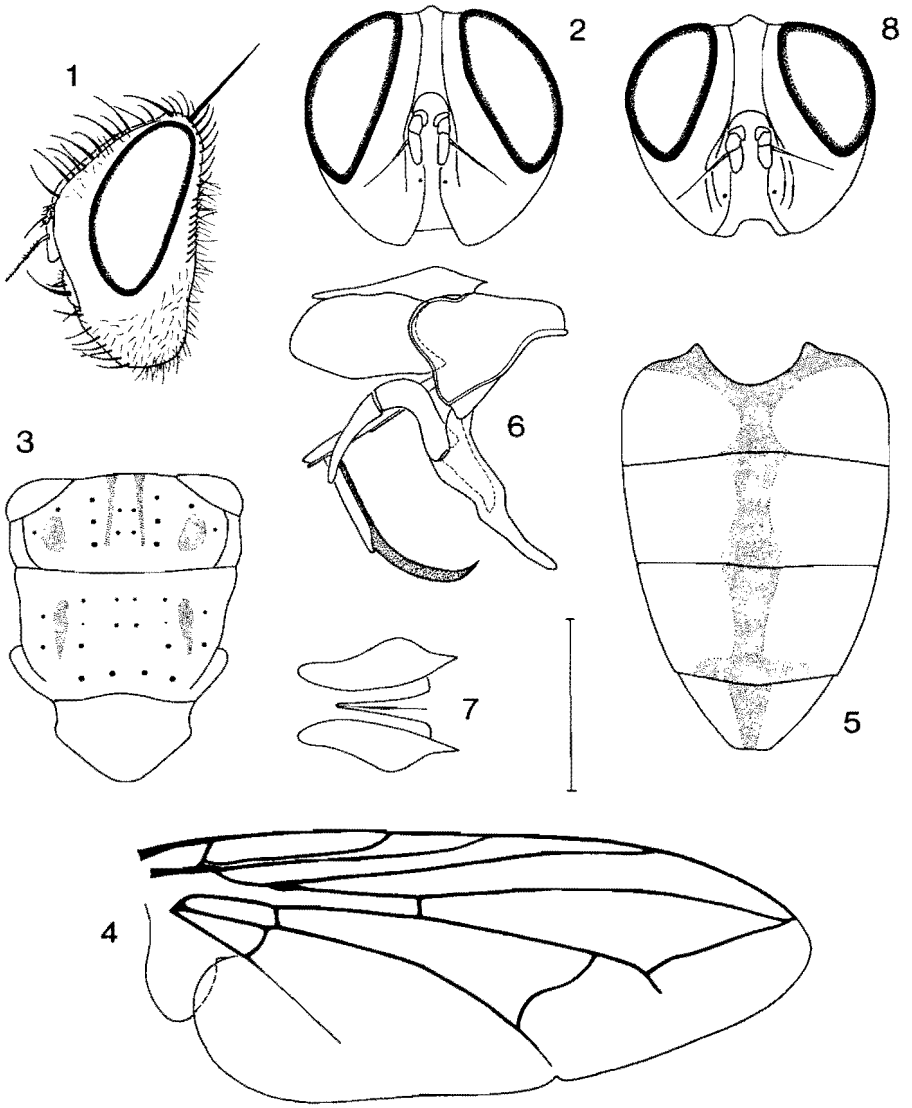
Head: Ground colour yellow-brown; interfrontal and arista brown; occiput, vertex, clypeus and mentum dark brown to black. Silver to silver-yellow pollinosity on following areas: occiput, ocellar triangle, parafrontal, lunula, parafacial, facial ridge, epistomal strip, face and gena. Occiput with yellow hairing, mostly restricted to lower three-quarters, length of hairing subequal to length of postocular row setae (Fig. 1).

Thorax: Ground colour black, but humerus and scutellum yellow-brown. Pollinosity silver-yellow, but gold-brown along midline of mesonotum, especially between *post acr* rows. Mesonotal pollinosity absent in following areas (see Fig. 3): narrow, longitudinal paired streaks extending from anterior margin of prescutum between *prst dc* and *prst acr* rows, to about level with posterior *prst dc*; irregular paired markings between posthumerals and posterior two *prst dc*; lanceolate paired markings between *post ia* and *post dc* rows, extending posteriorly to level of second *post ia* and *post dc*. Postsutural dorsocentrals spaced for four, setula between first and second setae subequal in length to pre-alar (setula very rarely well developed, and up to 2,0 × as long as pre-alar). Propleuron black haired. Sternopleurals 1+1+1, middle *stpl* half (half to two-thirds) length and strength of others, positioned below level of anterior and posterior sternopleurals, distance between anterior two sternopleurals subequal to length of second antennal segment. Haltere yellow-brown. Lower calypter cream coloured (rim yellow-brown) and entirely opaque. Wing hyaline, veins yellow-brown to brown. Legs yellow-brown.

Abdomen: Ground colour of dorsum yellow-brown. Pollinosity silver-yellow, absent basally and on a longitudinal, glossy brown-black median vitta, extending between T1+2 excavation and apex of T5 (Fig. 5).

Male Genitalia (Figs 6 & 7): Distiphallus well developed, surface minutely denticulate in apical half and coarsely so in basoventral third to half below basal sclerite. Epiphallus short, about 0,2–0,3 × length of postgonite. Postgonite 0,5 × length of distiphallus, rather narrowly lanceolate. Pregonite broad basally, but narrower midway along length, and broader apically although apical section not quite as broad as base. Surstylus very broad, apical section rather bluntly rounded. Cerci with narrow apical halves apposed along their entire length, perfectly straight in dorsal and lateral views.

ETYMOLOGY. *Vitta* (L.) = stripe, band; refers to the median, longitudinal vitta on the abdominal dorsum.



Figs 1–8. 1–7: *Piligenoides vittata* **gen. nov., sp. nov.** 1. Head, lateral aspect, ♂ (holotype). 2. Head, frontal aspect (vestiture omitted), ♂ (holotype). 3. Thoracic dorsum, positions of paired non-pollinose areas (stippled), ♂ (holotype). 4. Wing venation, ♂ (paratype). 5. Abdominal dorsum, appearance of non-pollinose median vitta, ♂ (holotype). 6. Hypopygium, lateral aspect (vestiture omitted), ♂ (paratype). 7. Cercal apices and surstyli, dorsal aspect (vestiture omitted), ♂ (paratype). 8. *Piligena mackieae* van Emden, head, frontal aspect (vestiture omitted), ♂. (Scale = 0,5 mm, Figs 6 & 7).

MATERIAL EXAMINED. Holotype, ♂: SOUTH AFRICA: 'Natal/St Lucia Nature Res./2832AD 18–20.xii.1981/Londt & Stuckenberg/Coastal bush & forest'. Paratypes: 4♂, same data; 6♂, Natal, Zululand, Dukuduku Forest, 4 mi. W. of St. Lucia, 2832Ad, 26.xi.1971, M. E. & B. J. Irwin; 2♂, Natal, Tongaland, Ingwavuma District, Ndumu Reserve, 1–10.xii.1963, B. & P. Stuckenberg; 1♂, Natal, Zululand, Mtubatuba, v.1941, H. K. Munro. Holotype and paratypes in Natal Museum, Pietermaritzburg (type number NM 3050).

REMARKS. The male holotype is in good condition, although the apical four segments of the left mid tarsus are missing, as are the apical three to four segments of the hind tarsi. It is the only specimen in the type series to be both structurally sound and non-greasy. Nearly all the paratypes are partly or entirely greasy. The greasiness has the effect of obscuring (very often completely) the pollinosity on the head, thorax and abdomen. This pollinosity is responsible for the naked-eye appearance of the fly, and the following 'variations' in ground colouring are evident in male paratypes in which pollinosity is absent: parafrontal black; notopleural, supra-alar and postalar callus areas yellow-brown; abdominal dorsum yellow-brown to brown with a black median vitta.

Piligenoides vittata is apparently restricted to coastal areas of northern Natal Province of South Africa, although it probably occurs in southern Mozambique as well.

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